BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

ADVISORY COUNCIL
REGULAR MEETING

WEDNESDAY
JULY 14, 2004
10:00 A.M.

SEVENTH FLOOR
BOARD ROOM

AGENDA

CALL TO ORDER

Opening Comments — Elinor Blake, Chairperson
Roll Call — Clerk

PUBLIC COMMENT PERIOD

Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3. *The public has the opportunity to speak on any agenda item. All agendas for Advisory Council Committee meetings are posted at the District, 939 Ellis Street, San Francisco, at least 72 hours before a meeting. At the beginning of the meeting, an opportunity is also provided for the public to speak on any subject within the Committee's purview. Speakers are limited to five minutes each.*

CONSENT CALENDAR

1. Approval of Minutes of May 12, 2004

COMMITTEE REPORTS

2. Report of the Air Quality Planning Committee Meeting of June 15, 2004 — Chair Brazil
3. Report of the Public Health Committee Meeting of May 12 — Chair Weiner
4. Report of the Technical Committee Meeting of June 3, 2004 — Chair Bedsworth
5. Report of the Executive Committee Meeting of July 14, 2004 — Chair Blake

PRESENTATIONS

6. Community Risk Reduction Program (CARE)

   The Advisory Council will receive and discuss a District staff presentation on the CARE program.

7. Air & Waste Management Association (A&WMA) Annual Exhibition & Meeting

   Advisory Council members Altshuler, Bramlett, Brazil, Drennen, Hayes, Holtzclaw, Kurucz, and Torreano will report out on their attendance at the 97th A&WMA Exhibition & meeting held June 22-25 in Indianapolis, Indiana.

OTHER BUSINESS

8. Report of the Executive Officer/APCO — Jack Broadbent

9. Report of Advisory Council Chair — Elinor Blake

10. Council Member Comments/Other Business

    Council or staff members on their own initiative, or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on their own activities, provide a reference to staff about factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda.

11. Time and Place of Next Meeting

    10:00 a.m., Wednesday, September 8, 2004, 939 Ellis Street, San Francisco, California 94109.

12. Adjournment

EB:jc

CONTACT CLERK OF THE BOARDS - 939 ELLIS STREET SF, CA 94109 **(415) 749-4965**
FAX: (415) 928-8560
BAAQMD homepage:
www.baaqmd.gov

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities notification to the Clerk's Office should be given in a timely manner so that arrangements can be made accordingly.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

CLERK OF THE BOARDS OFFICE:
MONTHLY CALENDAR OF DISTRICT MEETINGS

JULY 2004

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)* - **CANCELLED**	**Wednesday**	**7**	**9:45 a.m.**	**Board Room**
Board of Directors Mobile Source Committee *(Meets 2nd Thursday each Month)*	**Thursday**	**8**	**9:30 a.m.**	**4th Floor Conf. Room**
Advisory Council Executive Committee	**Wednesday**	**14**	**9:00 a.m.**	**Room 716**
Advisory Council Regular Meeting	**Wednesday**	**14**	**10:00 a.m.**	**Board Room**
Advisory Council Public Health Committee - **CANCELLED**	**Monday**	**19**	**1:30 p.m.**	**Room 716**
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)*	**Wednesday**	**21**	**9:45 a.m.**	**Board Room**
Board of Directors Stationary Source Committee *(Meets 4th Monday every other Month)* - **CANCELLED**	**Monday**	**26**	**9:30 a.m.**	**Board Room**
Board of Directors Budget & Finance Committee *(Meets 4th Wednesday each Month)*	**Wednesday**	**28**	**9:45 a.m.**	**4th Floor Conf. Room**

AUGUST 2004

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Advisory Council Air Quality Planning Committee - **CANCELLED**	**Tuesday**	**3**	**9:30 a.m.**	**Room 716**
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)*	**Wednesday**	**4**	**9:45 a.m.**	**Board Room**
Advisory Council Technical Committee - **CANCELLED**	**Wednesday**	**4**	**1:30 p.m.**	**Board Room**
Board of Directors Public Outreach Committee *(Meets 2nd Monday every other Month)*	**Monday**	**9**	**9:45 a.m.**	**4th Floor Conf. Room**

(August 2004 Calendar continued on next page)

AUGUST 2004

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Mobile Source Committee *(Meets 2nd Thursday each Month)*	**Thursday**	**12**	**9:30 a.m.**	**4th Floor Conf. Room**
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)*	**Wednesday**	**18**	**9:45 a.m.**	**Board Room**
Board of Directors Budget & Finance Committee *(Meets 4th Wednesday each Month)*	**Wednesday**	**25**	**9:45 a.m.**	**4th Floor Conf. Room**

SEPTEMBER 2004

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)*	**Wednesday**	**1**	**9:45 a.m.**	**Board Room**
Advisory Council Executive Committee	**Wednesday**	**8**	**9:00 a.m.**	**Room 716**
Advisory Council Regular Meeting	**Wednesday**	**8**	**10:00 a.m.**	**Board Room**
Advisory Council Public Health Committee	**Wednesday**	**8**	**12:30 p.m.**	**Room 716**
Board of Directors Mobile Source Committee *(Meets 2nd Thursday each Month)*	**Thursday**	**9**	**9:30 a.m.**	**4th Floor Conf. Room**
Board of Directors Regular Meeting *(Meets 1st & 3rd Wednesday of each Month)*	**Wednesday**	**15**	**9:45 a.m.**	**Board Room**
Board of Directors Budget & Finance Committee *(Meets 4th Wednesday each Month)*	**Wednesday**	**22**	**9:45 a.m.**	**4th Floor Conf. Room**
Board of Directors Stationary Source Committee *(Meets 4th Monday every other Month)*	**Monday**	**27**	**9:30 a.m.**	**Board Room**
Board of Directors Executive Committee *(Meets 5th Wednesday of Months that have 5 Wednesdays)*	**Wednesday**	**29**	**9:30 a.m.**	**4th Floor Conf. Room**

MR:jc
7/7/04 (1:24 p.m.)
P/Library/Calendar/Moncal

AGENDA NO. 1

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

DRAFT MINUTES

Advisory Council Regular Meeting
10:00 a.m., Wednesday, May 12, 2004

CALL TO ORDER 10:10 a.m.

Opening Comments Chairperson Blake welcomed new "Architect" category appointee Sanjiv Bhandari to the Advisory Council. Mr. Bhandari noted that he has been involved with the Metropolitan Transportation Commission Advisory Council and in a group in Contra Costa County that has been developing a green building program for the county and also the City of San Ramon.

Roll Call Present: Elinor Blake, Chairperson, Sam Altshuler, P.E., Diane Bailey, Louise Bedsworth, Ph.D., Sanjiv Bhandari, Jeffrey Bramlett, Harold Brazil, Irvin Dawid, Emily Drennen, Fred Glueck, Stan Hayes, John Holtzclaw, Ph.D., Norman A. Lapera, Jr., Victor Torreano, Linda Weiner, Brian Zamora.

Absent: Robert Bornstein, Ph.D., William Hanna, Kraig Kurucz, Kevin Shanahan.

CONSENT CALENDAR

1. **Approval of Minutes of March 10, 2004.** Chairperson Blake deferred this item until after the guest speaker presentation.

PUBLIC COMMENT PERIOD There were no public comments.

PRESENTATION

2. **Indoor Air Technical & Policy Issues: An Update for the BAAQMD Advisory Council.**

Jed Waldman, Ph.D., Chief, Indoor Air Quality Section, California Department of Health Services, stated that Americans spent approximately 90% of their time indoors. Most indoor environments have less effective air exchange than the urban atmosphere and certain pollutants occur at higher levels indoors than outdoors. In an indoor environment, cigarette smoke and pollen have a thousand-fold greater chance of reaching a human being than outside due to less dispersion.

Ambient air quality management emphasizes source control methods to reduce exposure to pollution. Indoor air quality management is somewhat more flexible and is achieved by modifying ventilation rates, either through code modification or building management staff. Green building design combines energy conservation and resource efficiency to build healthier buildings with lower indoor pollution sources and more effective ventilation. This enables "building commissioning" in which a building is constructed and operated according to its design.

Indoor air pollution contains gases and vapors similar to ambient air, including volatile organic compounds such as formaldehyde; particulate matter and dust from tobacco, wood combustion and cooking; allergens from dust mites, pollens and pet dander; fibers from asbestos and microbial fungi and viruses; and toxics such as lead, pesticides and polychlorinated biphenyls (PCBs). Other indoor sources include construction and cleaning products such as adhesives; solvents, insulation and ceiling tile, paints; furnishings such as carpets, upholstery, pressed wood; ventilation system components; office equipment, personal care products, and dry cleaned clothes. Tobacco was once the most important indoor pollution source, but that has been reduced by 90% through the law.

Health risks from indoor air pollution include eye and respiratory irritation, allergies, asthma, chronic sinusitis, increased rates of infectious diseases such as influenza and colds, neurological impairment such as headaches, memory and motor function, and increased cancer risks. The terminology governing such effects includes "building related illness," "sick building syndrome" and "multiple chemical sensitivity." These are broad terms for health effects caused by a multitude of factors, and many toxins also have the same health effects. An individual may feel better at home than at work, or vice versa. Symptoms from these circumstances range from perception of bothersome odors, temporary mild discomfort, to severe illness and permanent injury.

Regulatory authority for ambient air quality resides in the District and the California Air Resources Board (CARB). The California Occupational Safety & Health Administration (Cal/OSHA) promulgates workplace exposure standards and air toxics reference exposure level standards. California's regulations on smoking are enforced locally. There is new legislation that will restrict smoking in vehicles in which small children are traveling.

Proposition 65 requires posted warnings indoors, and applies water quality exposure limits to indoor air quality. It is enforced through litigation — examples of which are the product reformulations of nail care products and typewriter correction fluid. Draft indoor air quality guidelines, based on ambient air quality standards and reference exposure levels, are under discussion. Federal clean air legislation will address radon content in drinking water, which is the greatest source of cancer risk in indoor air and is comparable to second hand smoke. A multi-media regulatory approach has been developed for water quality agencies that would allow radon content in homes above a lower end threshold in return for the institution of an indoor air quality program.

Indoor air quality emission limits are primarily addressed by focusing on individual appliances. The Gas Appliance Manufacturing Association (GAMA) sets the flame emission limits for stoves. The Housing & Urban Development commission regulates formaldehyde emissions from pressed wood products. Consumer products are regulated by the Food and Drug Administration (FDA). Section 01350 is a state specification developed by a group of representatives from the Department of General Services (DGS), Department of Health Services (DHS), and State Consumer Protection Society (SCPC), on the purchase of carpentry, office module furniture, etc. It requires a high-recycled content and a high recycling potential. Indoor lighting must be energy efficient. This group provides an excellent model for stakeholders to meet and produce an effective standard.

With regard to building design and construction standards and guidelines for materials, the standards for ventilation are created by a non-government group called the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE). The U.S. Green Building Council has established Leadership in Energy & Environmental Design (LEED). There are also self-inspection guidelines and a Collaborative for High Performance Schools (CHPS) in place.

Key indoor air quality agencies include the federal Environmental Protection Agency (EPA), the Center for Disease Control (CDC) (to assess moisture and mold), and the National Institute of Occupational Safety and Health (NIOSH) to provide funding for research. The State Department of Health Services (DHS) has an indoor air quality program. CARB has a research division that includes indoor air quality. Cal/OSHA is the regulatory agency. The Office of Environmental Health Hazard Assessment (OEHHA) provides risk assessment. The DGS oversees the construction of new buildings and materials procurement. The California Energy Commission (CEC) and the State & Consumer Services Agency (SCSA) provide additional oversight on the sustainable building effort.

Home inspection authority is found at the local level, through rental property requirements and individual homeowner compliance with building codes. Local environmental health, as well as housing, inspectors received training years ago but their success was variable. The American Lung Association is very knowledgeable and promotes indoor air quality improvement. The Green Building Council (GBC) promotes standards in building design and ASHRAE maintains the ventilation standards. The tobacco and hospitality industries are still fighting in other states. The Carpet & Rug Institute (CRI) is an exceptional group for minimizing indoor air pollution. Other research organizations on indoor air quality include the Lawrence Berkeley National Laboratory.

- Several years ago, the Toxic Mold Protection Act was passed, but it was written in a way that did not provide the DHS enforcement authority, and so it has mainly raised public awareness.
- EPA has advocated improving indoor air quality in schools, and the CHPS leads the nation in the sustainable green building effort for schools.
- In the 1980's, the DGS put together a building task force, which included the DHS and coordinated the energy efficiency and recycled products fields to promote indoor air quality.
- The Department of Education building in the east wing of the State capitol is a landmark of green building principles.
- The District can collaborate with DHS to address public health concern on air pollution exposures that include indoor air.
- The Spare the Air program provides an opportunity explicate the meaning of "shelter in place."
- There are noteworthy public outreach opportunities regarding exposure to particulate matter generated on roadways and the idling of dieselbuses in schoolyards.
- The DHS is collaborating with CARB to develop a rule for pressed wood products that release formaldehyde, as indoor emissions affect outdoor air and should be included in the baseline emissions inventory.
- Plywood and pressed wood product manufacturers will need to respond to such emission standards.

In reply to Council member questions, Dr. Waldman stated:

a) There is a 50/50 split between exposure to particulate matter in indoor and outdoor air: 90% of the exposure to benzene occurs indoors even though more than 90% of benzene emissions derive from industrial sources. For formaldehyde, which has the largest carcinogenic risk, indoor exposure levels are three to four times greater than in outdoor air.

b) There are no enforcement mechanisms for cigarette smoke in homes or apartments. Title V ventilation requirements that apply to the workplace cannot be applied to residential environments. However, property co-ops may provide some means of accountability.

c) Radon in drinking water emanates only from ground water, and homes that obtain water directly from wells are the most at risk. A survey of California homes has never reached the high levels of radon found in homes in Pennsylvania or New Jersey. However, none of the counties in California will need to address radon in drinking water or in the air.

d) Substandard housing is a socio-economic surrogate for indoor air pollution health risks.

e) Nationwide statistical data on the cancer mortality risk comparing radon and tobacco smoke indicate that about 15,000 excess lung cancers are due to radon exposure. The risk is primarily associated with smokers as there are synergistic effects between indoor radon and tobacco. These data have not been adjusted for California, which has a lower than national average for smoking and a lower radon level as well. Data for diesel PM mortality on a national level predict that 60,000 cardiovascular related deaths occur annually.

f) As to whether the causality of asthma is due more to indoor air in which 90% of Americans spend their time and are exposed to PM about 50% of the time, it depends upon the trigger. Bio-allergens such dust mites and pet dander are quite prevalent indoors.

g) The DHS focuses its building commissioning efforts on schools and compliance is voluntary. Mr. Bhandari noted that there are no building commissioning regulations for tract homes. In Texas and California, agencies work cooperatively with but do not regulate home builders. Suppliers and builders can be encouraged to use preferred products prior to the adoption of policies, but such materials must be available for a policy to work. Indoor materials do pollute outside air when they are used on or near exterior surfaces.

h) Recent indoor air chemistry analysis reveals that many home products release chemicals that react with ozone, and can produce a little smog factory within the home, despite lower concentrations of ozone indoors.

i) The District and the DHS could collaborate in public outreach and education to deliver a message about how the choices people make in their home and work environments influence their both their health and ambient air quality.

Jack Broadbent, Executive Officer/APCO, requested that the Advisory Council review the role of the District in indoor air quality management and consider potential future agency programs in this field.

CONSENT CALENDAR

1. **Approval of Minutes of March 10, 2004.** Ms. Bailey requested that she be listed as "Present" at the meeting. Mr. Dawid requested that in the first sentence on page five, SB 2683 be changed to AB 2683, and on page six, first paragraph, AB 2683 be changed to AB 2628. So moved by Dr. Holtzclaw; seconded by Mr. Dawid; carried.

COMMITTEE REPORTS

3. **Report of the Joint Meeting of the Air Quality Planning and Technical Committee Meeting of April 6, 2004.** Mr. Brazil stated the Committees reviewed and discussed the stationary and mobile source control measures proposed for the District's ozone strategy. The Air Quality Planning

Committee will make formal comments on the measures at is next meeting.

4. **Report of the Public Health Committee Meeting of March 10 and April 19, 2004.** Ms. Weiner stated that the Committee met on March 10 to discuss presentations given at a previous Committee meeting on the precautionary principle and cumulative risk assessment.

   On April 19, staff provided a presentation on the proposed Toxics New Source Review (TNSR) rulemaking and staff's response to the comments of the Environmental Law & Justice Clinic on it. Staff also gave a presentation on the District's Community Risk Reduction Plan (CARE). The Committee will meet this afternoon to discuss these two presentations.

   Mr. Glueck inquired if the risk factor analysis will include health impacts from personal lifestyles such as smoking, and if indoor pollution may have a greater impact from a public health perspective than pollution from outdoors. Ms. Weiner replied that while this may be possible, it is not the Committee's charge. From a public health viewpoint, the issue concerns health-based criteria and permitting new sites in a community that may have many other sources of pollution. Adults may spend 90% of their time indoors, but children spend a lot of time outdoors.

   Chairperson Blake added that staff had asked the Council in January to review the TNSR rulemaking with an eye to cumulative risk and the precautionary principle. The rulemaking process led the District to develop the Community Risk Reduction Plan to address cumulative risk, and staff asked for Public Health Committee review. The Committee will comment on the Plan in place of the earlier assignment and will not bring formal recommendations to the full Council on cumulative risk and the precautionary principle. Staff will give the Council an abbreviated presentation on the Plan for discussion at the Council's July meeting.

5. **Report of the Executive Committee Meeting of May 12, 2004.** Chairperson Blake stated the Executive Committee met this morning and added to the list of review topics the issue of homeland environmental security, if time permits this year. The Deputy Clerk also provided a follow-up proposal on tracking Council recommendations and referrals to staff, and the Committee endorsed this procedure. Ms. Blake added that the Chairs of the Committees should be the vehicles through which Council members contact staff and request information, whether via e-mail or telephone.

OTHER BUSINESS

6. **Report of the Executive Officer/APCO.** Mr. Broadbent stated:

   a) A $52 million District budget is being proposed for FY 04/05. This includes $500,000 for CARE; the Ozone Strategy; improvements to the computer database system; and some additional agency efficiencies. The Governor may propose a reduction of $350 million in property tax revenues for special districts. The budget can be presented to the full Council following its adoption by the Governing Board.

   b) EPA recently designated the District as non-attainment for the 8-hour ozone standard.

   c) Council representation is sought on the Cost Recovery and CARE steering committees.

   d) Deputy APCO Peter Hess has been elected the President of the Air & Waste Management Association for 2006 and will be its President-Elect in 2005.

e) The question raised at the previous Council meeting by Drs. Holtzclaw and Bornstein about a proposed revision to the toxics community right-to-know law will be answered via an e-mail to the Deputy Clerk for forwarding to the Council. The public comment period ends on May 20.

f) The Supreme Court ruled last month that the South Coast AQMD lacks the authority to adopt fleet rules for private fleet operators that would have regulated emissions through purchase requirements. The Court ruled that these rules were de facto emission standards, and only the federal government may promulgate such. However, it still has not been decided whether such rules can be adopted for public fleets. The South Coast AQMD will seek a waiver from the EPA through CARB to keep in place the fleet rules that are directed toward public fleets. Staff will keep the Advisory Council apprised of further developments in this matter.

   Ms. Bailey noted that the Court remanded the SCAQMD rules to a lower Court to be decided with regard to private fleets, and such rules as the yard hostler rule are still in place. The San Joaquin Valley APCD is will also move forward with a fleet rule for school buses.

g) EPA announced this week its engine standards rule for off-road diesel engines, as well as future effective dates for rules regarding new on-road engines.

7. **Report of Advisory Council Chair.** Chairperson Blake stated that last week she and Vice-Chair Zamora met with the Mr. Broadbent in a periodic check-in to discuss Advisory Council direction.

8. **Council Member Comments/Other Business.** Mr. Dawid expressed an interest in seeing data comparing emissions from a new state-of-the-art bus fleet with emissions from a fleet that is experiencing a fairly rapid turnover. Ms. Bailey noted that the NRDC just released a report on achieving further emission reductions from the Port of Oakland. Chairperson Blake indicated she has received from the State Department of Health Services a document on environmental health surveillance.

9. **Time and Place of Next Meeting.** 10:00 a.m., Wednesday, July 14, 2004, 939 Ellis Street, San Francisco, CA 94109.

10. **Adjournment.** The meeting was adjourned at 12:04 p.m.

James N. Corazza
Deputy Clerk of the Boards

AGENDA NO. 2

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Advisory Council
Air Quality Planning Committee Meeting
9:00 a.m., Tuesday, June 15, 2004

1. **Call to Order – Roll Call.** 9:40 a.m. Quorum Present: Harold Brazil, Chairperson, Irvin Dawid, Fred Glueck, John Holtzclaw, Ph.D., Kraig Kurucz, Kevin Shanahan. Absent: Emily Drennen.

2. **Public Comment Period.** There were none.

3. **Approval of April 6, 2004 Minutes of the Joint Meeting of the Air Quality Planning and Technical Committees.**
   Mr. Dawid requested that at the top of Page 3, item (f) $2 million should be changed to $2.5 million; insert the word "Regional Measure 2 (RM2)" between the words "anticipated" and "funding". The first sentence of item (f) should be changed to read as follows: City Car Share Program received $2.5 million in anticipated RM2 funding. City Car Share Programs will be included in the Local Land Use Planning and Development TCM. This funding is not specified in TCM15.

   On Page 4, item (u), add the word "Regional" before the word "Parking", and add "by the Air District" after the word "administered".

   Mr. Glueck moved approval of the April 6, 2004 minutes, as amended; seconded by Mr. Shanahan; carried unanimously.

4. **District's Ozone Control Strategy.**
   Staff provided an update on control measure development for the District's 2004 Ozone Strategy. Henry Hilken, Air Quality Planning Manager, commenced the presentation with an introduction and stated that Joseph Steinberger, Senior Environmental Planner, and Dan Belik, Rules Development Manager, will present some of the elements of the 2004 Ozone Strategy.

   Mr. Hilken noted that a couple of significant events occurred since the discussions at the last Joint Meeting of the Technical and Planning Committees held April 6, 2004: (1) On April 1, 2004 the Environmental Protection Agency (EPA) made a final finding of attainment for the 1-hour national ozone standard. Based on monitoring data from 2001, 2002 and 2003, the Bay Area has attained the national 1-hour ozone standard. This does not mean that the Bay Area has been redesignated as an attainment area; there will be a redesignation process and a maintenance plan that must be developed in order to be officially redesignated as an attainment area. As part of that action, EPA also approved the relevant elements from the 2001 Ozone Attainment Plan. (2) On April 15, 2004, U.S. EPA deemed the Bay Area to be a non-attainment area for the national 8-hour ozone standard. The national 8-hour ozone standard is considered to be more health protective than the 1-hour standard, therefore, EPA is shifting over from the 1-hour standard to the 8-hour standard. The first

half of the implementation guidelines are available and the second half are expected in the Summer, 2004. The 1-hour standard will be revoked in June 2005. Bay Area is a marginal nonattainment area, which is basically the cleanest of any of the nonattainment areas for the 8-hour standard. The 1-hour exceedances are usually seen in Livermore, but San Martin in the South Bay has been a problem site for the 8-hour standard. The District will not have to provide an extensive attainment plan as a marginal area, but will have to provide EPA with certain elements, such as an emissions inventory, and a demonstration that the permitting program meets the applicable requirements. For the California Clean Air Act, the District is required to update the State Clean Air Plan every three years and the District has done that in 1991, 1994, 1997, and 2000. For the state standard, the District must show continued progress towards the state 1-hour ozone standard and address transport mitigation requirements.

Mr. Hilken noted that another element of the 2004 Ozone Strategy is the redesignation request and maintenance plan and the District is combining them into one single ozone attainment document. The national element will be the formal request to EPA to redesignate the District as an attainment area for the 1-hour standard, and a maintenance plan will show continued attainment of that standard.

Other elements of the Ozone Strategy that will apply to the national planning requirements that are not required at this point are: (1) the interagency consultation procedures and (2) Transportation Control Measure (TCM) substitution process. These are elements that the Metropolitan Transportation Commission (MTC) has proposed for making some minor revisions to the interagency consultation procedures with respect to transportation conformity, and processes for future possible substitutions of TCMs in the State Implementation Plan (SIP). These can be done at any time but since the District is going through the SIP process currently, MTC and the Air District agreed that this is a logical time to include these items in the SIP submittal to ARB and EPA. Since the District is a marginal nonattainment area for the 8-hour standard, the District does not have to submit an attainment plan. The main document that must be submitted at this point in time is an emission inventory.

Mr. Hilken described the various types of Control Measures proposed in the 2004 Ozone Strategy:

- **Stationary source measures** – that are implemented through revisions and amendments to District Rules for various stationary and commercial sources like oil refineries
- **Mobile source measures** – which seek to reduce emissions from motor vehicles by the incentive programs to get more clean fuel vehicles on the roads
- **Transportation control measures** – which are aimed at reducing motor vehicle use, vehicle trips and vehicle miles traveled; for example, car pooling, transit, bike pedestrian type programs.
- **Further study measures** – these are not part of the formal control strategy yet, but are preliminary evaluations that meet some of the evaluation criteria. During the planning period staff will be reviewing these measures further to see if they are technologically feasible and cost effective. Many of the further study measures from the 2001 Ozone Attainment Plan are being developed by the District as rules, such as the stationary source measures – the refinery waste water rule that will be brought to the Board of Directors for adoption shortly, and some of the other refinery measures that will also be adopted as rules.

Mr. Hilken explained that staff explored a wide range of potential control measures over a year ago and evaluated them for technical feasibility, cost effectiveness and significant emission reductions. Staff selected a limited number of control measures that met the criteria for inclusion in the draft of the Ozone Strategy. Various agencies and stakeholders provided input to staff during the evaluation process.

Mr. Hilken explained the following Draft Transportation Control Measures (TCMs):

- Voluntary employer based trip reduction programs
- Local and area-wide bus service
- Regional rail service
- Interregional rail service
- Access to ferries and rail
- Ferry Service
- Carpool/express bus lanes on freeways
- Bicycle access and facilities
- Youth transportation (includes clean fuel school buses)
- Freeway traffic management
- Arterial management
- Transit use incentives
- Carpool/vanpool services
- Local land use planning and development strategies
- Public education/intermittent controls
- Demonstration projects (includes clean air vehicles)
- Transportation pricing reform
- Pedestrian access and facilities
- Traffic calming

Mr. Hilken informed the Committee that staff worked closely with MTC on these measures. Since 1991 there have been a wide range of TCMs in the state Clean Air Plan and the national Ozone Plan.

Mr. Steinberger explained three Mobile Source Measures:

Diesel Equipment Idling Ordinance: The District would develop a model ordinance and encourage local government agencies to adopt and enforce it. This ordinance would limit heavy-duty diesel equipment (heavy-duty trucks, buses and construction equipment) to idling no more than five minutes. Predominantly this would effect their operations at warehouses, distribution centers, port terminals, truck stops and rest areas. Much of this equipment already has the potential to have their engines turned off after five minutes of idling because they have computers installed in most of the modern heavy-duty on-road vehicles. The other equipment would require operators to manually turn them off after five minutes. There is a savings of $1,600 in fuel costs and $2,000 in maintenance costs to the operators; additionally, there would be a reduction in NOx emissions, toxic air contaminants and particulate matter.

Green Contracting Ordinance: The District would draft a model ordinance for local government agencies to adopt and implement. When local government agencies contract with private

contractors, this ordinance would encourage them to give the private contractors some preferential considerations if they operate low emission fleets, use alternative fuels, encourage ride-sharing at their businesses and respond to Spare the Air Days by taking recommended action to reduce pollution.

Low Emission Vehicle Incentives: This measure encourages the use of low emission vehicles through the Transportation Fund for Clean Air (TFCA) program, Carl Moyer program and other grant programs that the District operates. In the enabling legislation for the TFCA program, there are certain eligible categories, and to fund those it is necessary that they also be included in a Clean Air Plan to attain the federal and/or state standards. Therefore, the District is incorporating this measure into an attainment plan so that the funding can continue. Mr. Steinberger explained that all the above measures are providing incentives for cleaner burning engines, fuels and/or exhaust treatment devices, for both on-road and off-road equipment of all weight classes.

Mr. Belik provided information on the following Stationary Source Measures and Further Study Measures:

STATIONARY SOURCE MEASURES:

Industrial – Commercial Processes

- Auto Refinishing
- Graphic Arts Operations
- High Emitting Spray Booths
- Polyester Resin Operations
- Wood Products Coating

Combustion Processes

- Boilers Rated Between 5 and 10 MM BTU/hr
- Large Water Heaters and Small Boilers
- Stationary Gas Turbines

Petroleum Products Production and Distribution

- Flares
- Gasoline Bulk Terminals and Plants
- Marine Loading Operations
- Organic Liquid Storage Tanks
- Pressure Relief Devices
- Wastewater Systems

FURTHER STUDY MEASURES:
Staff identified a number of measures that require further study to determine whether they are viable. Staff will analyze the further study measures for cost-effectiveness, technical feasibility and other factors to determine whether they are feasible for future air quality strategies. Potential further study measures include the following:

STATIONARY SOURCE FURTHER STUDY MEASURES:

Industrial – Commercial Processes

- Adhesives and Sealants
- Architectural Coatings
- Commercial Charbroilers
- Composting Operations
- Food Product Manufacturing and Processing
- Livestock Waste
- Limitations on Solvents Based On Relative Reactivity
- Solvent Cleaning and Degreasing

Petroleum Products Production and Distribution

- Emissions From Cooling Towers
- Refinery Wastewater Treatment Systems
- Vacuum Trucks
- Valves and Flanges
- Wastewater From Coke-Cutting Operations

Combustion Processes

- BackUp Diesel Generators / Cumulative Risk
- NOx Reductions From Glass Melting Furnaces
- Stationary Internal Combustion Engines

Mr. Belik explained that a number of these projects are on-going; some of these have already been adopted in the South Coast or the San Joaquin Valley, particularly regulations affecting commercial charboilers, composting operations and livestock waste. Field staff has noted that some of the dairies in Sonoma County seem to be in compliance with one of the compliance options that has already been adopted in the South Coast rules. Staff has had extensive discussions with other air districts and the California Air Resources Board (CARB) on a couple of other further study measures, particularly Adhesives and Sealants and Solvent Cleaning and Degreasing. Staff is looking into the issue of reconciling inventories. A lot of adhesives are used in architectural applications and because these are not permitted sources, it is difficult to obtain the necessary information in the same way that information is obtained from every permitted facility each year. Therefore, staff has had to use adjusted industry data for the Bay Area.

Regarding the Glass Melting Furnaces further study measure, Mr. Belik noted that since the sole remaining gas-fired glass melting plant in the Bay Area is complying with strict Best Available Control Technology (BACT) limits already, this may not need to be a further study measure since it is already being implemented.

Mr. Belik also provided information on the following Further Study Measures for Mobile and Transportation Sources:

MOBILE SOURCE FURTHER STUDY MEASURES

- Encourage Use of Biodiesel Fuel
- Mitigation Fee Program for Federal Sources

TRANSPORTATION CONTROL MEASURES

- Indirect Source Mitigation Program
- Free Transit on Spare the Air Days

Mr. Belik discussed the following next steps for the development and final adoption of the Draft 2004 Ozone Strategy:

- Continue developing draft control measures and further study measures
- Prepare draft 2004 Ozone Strategy by July 2004
- Prepare draft environmental impact report
- Public review and comment during latter part of the Summer, 2004
- Prepare final 2004 Ozone Strategy and EIR
- Board adoption in the Fall, 2004

Staff will consider extensive public input, and conduct further analysis, as necessary, in order to develop the proposed control measures and further study measures for inclusion in the Draft 2004 Ozone Strategy. The Draft 2004 Ozone Strategy will be available for public review in Summer, 2004.

Messrs. Belik, Hilken and Steinberger responded to Committee members' questions and comments as follows:

a) Mr. Glueck inquired if the District has any jurisdiction over foreign ships and issues with regard to marine loading. Mr. Belik stated that the District adopted a marine loading regulation in 1989 that reduced emissions by very large amounts. This regulation was very controversial at that time and jurisdiction was an issue when the original rule was adopted.
The District had reviewed the legal jurisdiction carefully and there were some questions raised about regulations regarding "housekeeping emissions" - purging marine tank vessels out in the Bay. The District believes that it is on very firm legal ground and that it does have regulatory authority to regulate emissions. However, there are several things that the District cannot regulate such as safety issues.

b) Mr. Glueck inquired whether any studies have been done to determine if there is more benefit with the reduction in idling time versus the constant start-ups and shut down. Mr. Steinberger responded that there could be some disbenefit if vehicles were frequently turned on and off, but if turned off for longer periods, the benefits outweigh the disbenefits. Mr. Steinberger has not seen any research on it; he would look into this to find out some additional definitive answers. Mr. Shanahan offered to help the District gather data on this issue.

c) Several members wondered as to why five minutes for the idling time was selected versus it being one minute. Mr. Steinberger explained that local areas in many different states have adopted these measures, and the Air Resources Board (ARB) is also currently working on a

similar measure. The ARB informed Mr. Steinberger that the five-minute idling allows for recommended manufacturer cool down times.

Mr. Steinberger stated that the District is only developing a model Diesel Equipment Idling Ordinance and Green Contracting Ordinance, and that local government agencies can rewrite the ordinances prior to adoption. The implementation might be the same as a local traffic ordinance. Mr. Shanahan opined that the various agencies would probably rely upon the District for the science of this study so that they feel that they are on solid ground as they move forward with this matter. The District might have the potential of providing useful data to do a more beneficial program with a tighter idling time limit.

d) Mr. Hilken explained how the District's process works in developing control measures. He stated that presently these are only control measure descriptions, and if and when the Board of Directors adopts the Ozone Strategy, there is then a second step where the staff will conduct a more extensive and detailed study on them; additionally, technical work groups will meet and workshops will be conducted to develop the details. This process will be followed for the Mobile Source Measures when additional data would be collected on some of the questions raised by the Committee today. Staff would certainly want to look at any data or information that Committee members might have to contribute in the development process of the measures.

Based on Mr. Hilken's explanation of the process, Mr. Glueck felt that the Committee members' questions and concerns could be addressed at the appropriate time during the development process of the control measures.

e) In response to an inquiry from Mr. Kurucz, Mr. Steinberger stated that there is currently one regulation for buses at schools to turn off their engines as soon as they arrive at the school, and they cannot start them up more than one minute before they depart. He was not aware of the specific details of other measures that were adopted in other parts of the country.

Mr. Dawid stated that diesel hybrids (heavy-duty), as opposed to gas hybrids, are not really low emission vehicles, and therefore, inquired as to how these could be categorized as Mobile Control Measures since low emission vehicle incentives come under this category of control measures. He wondered if the diesel hybrids could obtain a special designation as a mobile source control measure since he would like to see some incentives given to them. While pending legislation AB2628 rewards hybrid owners by allowing them to use the HOV lanes, hybrids provide a greater benefit in stop-and-go city traffic where there is a lot of idling. He feels that a mobile source measure could take advantage of the hybrid idling issue as well as its low emission vehicle status. Mr. Hilken responded that staff could certainly look into this to see what the emission reductions are from hybrid vehicles.

Mr. Dawid presented to staff, for their review, a copy of a letter dated May 25, 2004 from Governor Schwarzenegger on the recent campaign of "Flex Your Power…at the Pump" which requests all agencies to adopt fuel-efficient operations.

g) Mr. Shanahan inquired if it was possible for the District to measure the benefit in air quality when free transit on BART is provided to the public on the five Spare the Air weekdays. Mr. Hilken stated that monitoring the program for its cost effectiveness will be an important point. Part of the funds that MTC is providing will go towards paying BART for that service; for marketing the program to get the word out to the public that free transit is available; and for

monitoring it by counting the ridership on those Spare the Air Days when free BART fares were provided. Mr. Hilken explained that people have to get to the BART station on their own. The transit bus fares are not part of the free part of the program. Last year, LAVTA provided free transit on Spare the Air days and they are, once again, offering it this year. Mr. Hilken pointed out that there have been a couple of similar programs in previous years that have been reflected in TCM16. Additionally, there are further study measures for free transit on Spare the Air days that could have a broader application, depending on their cost effectiveness. Free transit is a good incentive that could increase ridership; however, it can also be very expensive. These types of demonstration programs will provide a lot of information on their cost effectiveness and to determine whether they deserve broader applications.

Mr. Dawid wanted to know if this is under a further study measure. Mr. Hilken stated that the District has done free transit on Spare the Air Day programs on VTA, LAVTA and BART. A certain amount of free transit on Spare the Air is in TCM16. However, the further study measure is looking at a broader application for it. Mr. Dawid recommended that he would like the Air District to consider broadening that further study measure to include disincentives as well as incentives.

h) Dr. Holtzclaw inquired if CARB has come up with a regulation requiring reflashing of the older engines. Mr. Steinberger responded that CARB was considering a regulation to have engines reflashed to reduce NOx emission but operators could have their engines reflashed if they were required to comply with a model ordinance for idling. These would be two separate requirements.

i) Dr. Holtzclaw wanted to know the status on back-up diesel generators. Mr. Belik explained that this Further Study Measure actually relates to the study and design of cumulative impact analysis that was brought up in the context of back-up diesel generators. It studies cumulative impacts in certain communities, and the District is moving forward in attempting to do that. There is a proposal to include funds in the District's budget to do some monitoring in certain communities and to move this project forward. It will evolve into planning and a rule development cycle at some point in time.

j) Mr. Glueck inquired if staff was aware of any national studies that have been conducted with regard to the effects of free transit ridership. Mr. Hilken stated that he is not aware of any such studies and not much data is available. It would be one of the things that staff would have to research in a further study measure. Other regions have offered free transit, to some extent, on their version of Spare the Air days. The monitoring is not quite as sophisticated as the program itself, and very often monitoring is not funded. Mr. Dawid pointed out that Caltrain offered free train service during the last two weekends, and it was very popular. A program such as this should be monitored to find out the ridership.

k) Mr. Kuruz noted that the pricing requirements were still listed in the control measures. He questioned whether those worked, and whether the District was able to access any data that indicated that there was a decrease in gasoline sales; also, if the prices are increased, what might be the reduction in consumption. In comparing today's prices to those of a year ago, might provide information on purchase patterns and their effectiveness. Mr. Hilken stated that this issue came up at the last Ozone Working Group, and MTC had responded that, as high as the gas prices are, they are very inelastic; people are generally willing to pay that extra cost, but logically there has to be some cut off point. Dr. Holtzclaw suggested that it might be more

effective in getting people to use more fuel-efficient cars in the long term. Mr. Dawid stated that there is already an indication that the waiting list for hybrid car purchases is up to a year.

l) Mr. Kurucz asked what the difference was between the further study measure for stationary internal combustion engines and back-up diesel generators. Mr. Belik explained that there are some control proposals and other Districts have some for stationary internal combustion engines. They typically tend to be of a much greater size - the types of engines used in water districts and landfills that are fired by methane gas. There are a lot of stationary internal combustion engines that do not run all the time; for example, in the Central Valley there are agricultural pumps that do not run constantly. In this district there are a few prime pumps that run all the time. There is also some work done by the Air Resources Board as a toxics control measure; they adopt Air Toxic Control Measures (ATCM) that become effective statewide. Hence, for diesel particulate matter they have adopted an ATCM for spark-fired engines and they are also working on one for compression-fired engines. These may be drivers, to an extent, that the further regulation may not really be necessary. Basically, back-up diesel generators, generally, are smaller.

   Mr. Kurucz stated that he was aware that ARB was working on some of these measures. However, with respect to back-up generators and ozone, he wanted to know if staff had any data on the amount of pounds per day. Mr. Belik responded that he did not have good data available. One of the problems in areas such as this is creating the inventory. The District does not require permits on small back-up generators, even though it requires them on some of the larger ones. There are many small back-up generators in use, many owned by cities and counties; some are used very infrequently and for many of them the emissions are less than one pound per day. Therefore, trying to create an inventory for any kind of intermittent source is difficult.

   Mr. Shanahan stated that in his business they had looked at the emergency stand-by generators; the other internal combustion engines that they deal with are water pumps. On the standby generators, in terms of ozone, it is more of a particulate matter health issue; if one of those is located near a school, for example, there is the issue of particulate matter, and the NOx component is a non-issue because it is so small. Mr. Kurucz inquired that if this was not included as an ozone strategy, and yet was still adopted, would that preclude the District from taking credit for the emission reductions of the NOx component. Mr. Belik stated that the District could take the credit.

m) Chairperson Brazil requested staff to describe the indirect source mitigation program. Mr. Hilken explained that there a lot of programs in TCM15 to promote Smart Growth that have more land use development near transit and in town centers, but this further study measure looks at a permitting or a fee program such as what San Joaquin Valley Unified Air Pollution Control District is looking at. San Joaquin has had some workshops on a proposed regulation to impose fees on land use development, and using those fees to buy mitigation programs, such as transit improvements and non-mobile mitigation strategies like agricultural pumps. The Air District and most other districts in the State are going to watch very closely what San Joaquin Valley eventually does, to see if there might be a need for similar programs in this district.

n) Mr. Dawid wanted to know if San Joaquin Valley differentiates between an inner city development and a green field development. Mr. Hilken stated that they have proposed setting the fees in such a manner that would encourage smarter development patterns. Mr. Dawid

opined that many no-growth advocates felt that there should be a differentiation between the different types of growth. Dr. Holtzclaw opined that the various fees will ultimately add up to an incomplete carbon tax rather than just passing a carbon tax to begin with, and giving an incentive right at the beginning for being more fuel-efficient.

o) In response to Mr. Shanahan's inquiry as to whether large employers were targeted by providing tickets to their employees for the free transit on BART during the five Spare the Air days program, Mr. Hilken explained that this is something that staff would look at in a further study measure – whether it should be offered throughout the entire region or targeted to certain corridors. This is a first step and this program will provide additional useful information for fine-tuning it for the future.

p) Mr. Dawid expressed his concerns regarding the heavy emphasis that is put on TCM4 (Improve Regional Rail Service), TCM5 (Improve Access to Rail and Ferries) and TCM6 (Improve Inter-Regional Rail Service); meanwhile buses are all lumped together into one TCM called Local and Area-wide Bus Service. If there is an interest to make a shift in mobile patterns, then buses must start commanding more than they are being viewed in the current Ozone Strategy. Mr. Dawid noted that San Joaquin has a subscription bus service that is very competitive with ACE, and is very effective. He suggested that the District start differentiating the different types of buses and reflect this by giving equal consideration in TCMs to buses.

Dr. Holzclaw stated that he felt that this had been already done to some extent. TCM5 indirectly refers primarily to buses. Mr. Hilken stated that the regional express bus program is included in TCM3.

Chairperson Brazil stated that he would refer all the comments received at today's meeting to the full Advisory Council, along with the strategy document.

5. Update on Networkcar Remote Emissions Demonstration Project.

Ryan Glancy, Marketing Manager, Networkcar, San Diego, California, provided the Committee with an update on the results of the Networkcar demonstration project of remote emissions monitoring devices in taxi cab, paratransit and other specialty fleets.

He covered the following topics in his presentation:

<u>Who is Networkcar?</u>

- Founded in 1999 and located in San Diego, California
- Owned by the Reynolds and Reynolds Company since December 2002
- Leading provider of wireless telematics solutions for:
    - Consumers
    - Fleets
    - Remote Air Quality Programs

<u>Remote Emissions Program History:</u>

- 5 year program is funded by a Carl Moyer clean air grant through ARB – Emission Reduction Credit Program
- Program is currently in its second year
- Program to monitor and reduce NOx in 1000 paratransit vehicles was launched in 2002

Program Goals:
- Explore the viability of remote emissions – monitoring as an emissions reduction method
- Main focus is on the reduction of NOx
- Program also reduces hydrocarbons (HC) and carbon monoxide (CO) emissions at no additional cost

How the Program Works – Technology:
- Networkcar dynamically measures and reports the status of a vehicle's emission system to effectively control oxides of nitrogen (NOx), hydrocarbons (HC), and carbon monoxide (CO)
- The device transmits this data over a conventional wireless network to an Internet-based computer system

How the Program Works – Benefits:
- Failing vehicles that would otherwise continue to drive in a heavily polluting condition are dynamically detected and reported
- Without this monitoring, non-compliant taxicabs can drive unchecked while emitting excess NOx into the environment; these levels persist even though the vehicle appears to function properly
- With the proposed system in place, polluting vehicles are quickly identified and repaired to reduce the amount of excess pollutants

Why Monitor Vehicles in the Clean Fleets Program?
- On-going CARB program with taxicab fleets
- Taxicabs drive average of 58,000 miles/year
- Taxicabs fail visual I/M emissions tests 28% of the time for being non-conforming
- Problems with tampering with MIL light are seen 9% of the time in visual inspections

Clean Fleets Program:
CARB performed laboratory testing to determine the levels of NOx reductions when the check engine light is on in the vehicle and then after post-repair. Based on their testing, it showed that there is a reduction of half a gram per mile of NOx by bringing that vehicle back into compliance.

Mr. Glancy explained that the two predecessors to this program are high mileage vehicles and a high likelihood that they go out of compliance very quickly.

Emissions Credit Reduction Program Status:
- Only available technology to monitor real-time diagnostic, emissions, and Diagnostic Trouble Codes (DTC) data
- Currently deployed and operational in over 1,000 vehicles in California (Carl Moyer Grant)
- Currently 830 vehicles in Los Angeles; 120 vehicles in Oakland at the Oakland Airport
- Failing vehicles are flagged in real time
- 14 days allocated to repair vehicle
- Program is voluntary; Networkcar does not "police". Follow-up and enforcement is not part of the company's goals within the program
- Data can be analyzed to detect fraud (e.g. unplugged unit)

Grant Award:
Networkcar was awarded a grant for $1,625,000 to deploy remote emissions-monitoring devices on 1,000 taxicabs for a period of five years. On an annual basis, in the first two years, there was a reduction of 46 tons of NOx, resulting in 92 tons to date. During a five-year period, 50 tons of NOx are reduced on an annual basis, resulting in a total of 250 tons. The reason that it scales up is because the higher mileage vehicles tend to have more problems and go out of compliance on a larger scale.

Program Savings To Date:
Mr. Glancy reported that 62 tons of NOx were reduced to date, during a period of two years. It is projected that by the end of the five-year period of the program, a total of 155 tons of NOx will be reduced. Together with other incentive-based measures, the Moyer Program has the potential to reduce NOx emissions, and can do so cost effectively for between $5,000 and $12,000 per ton. By comparison, controls on stationary sources cost between $10,000 and $20,000 per ton. The technology is very affordable and there are ways to bring the cost down considerably in the future.

Mr. Glancy further explained that the taxicabs in Oakland are higher mileage taxicabs. In Los Angeles the paratransit vehicles were included in the sample set of vehicles; therefore, there is a lower annual mileage on those vehicles. To date, the program is also seeing an average annual mileage of about 42,000 for the 1,000 taxicabs. Mr. Glancy stated that most of the data presented today are on an aggregate basis, and that they are compiling more data for Oakland. This information will be published in the next quarterly report for CARB due next week.

Mr. Glancy reported that Networkcar pays for a pre-repair smog check to obtain real data that can be correlated to the CARB laboratory tests for the half a gram of NOx per mile. A very small percentage of the cabs are actually getting the pre-repair smog check. The idea is to get the cab repaired because the goal of the program is to reduce NOx. The cab company has to pay for their own repairs and Networkcar then pays for a post-smog repair. This data is then used to correlate it back to the modeled numbers that CARB had done in their laboratory. They have had a difficult time collecting repair data costs. The technology automatically detects when the vehicle comes back into repair, the presence of the DTC going away, the trouble code associated with the problem; the MIL light going off and the check engine light going off. This indicates that the vehicle is back into compliance.

Mr. Dawid inquired if any taxicabs around the country had switched to hybrids. He understood that in New York they are switching to hybrids; the major incentive to do this is not air quality but fuel-savings. Because of the heavy stop-and-go traffic, unlike this program, there is a real incentive for the cab owners and fleet owners that are trying to switch to the hybrids. Mr. Glancy stated that he was not aware of any information on this. Mr. Dawid requested that this information be included in the packet for the Committee's next meeting in August 2004.

Mr. Shanahan inquired if cab companies were deriving any value from the Global Positioning System (GPS) system and whether they had a more effective way to dispatch their fleet. Mr. Glancy explained that this grant was rolled out pre-GPS technology integrated into Networkcar's technology. These are only diagnostic units and do not contain a GPS location-related modular piece. There is a large return on investment for the fleets regarding the use of the GPS data, the diagnostics, and the air quality-related return on investment. There might be a way to combine these to provide incentives for fleets to purchase the product if they propose to keep those vehicles within compliance. Mr. Shanahan stated that if these could be combined with some incentives,

then the cost per ton could be reduced significantly. Mr. Glancy reported that the Bureau of Automotive Repairs (BAR) has a continuous testing pilot program which is more of a consumer-related program where they allow the fleets to enroll their vehicles in those programs and this allows the fleet to be exempt from the annual smog check that they are required to do, as long as they keep the vehicle within compliance. The BAR program is very similar to this type of program. The only incentive for the fleet is the $60 to $70 for the smog check; there is a larger related benefit on the air quality and the NOx reductions.

Before and After Emissions Data:
Mr. Glancy presented a table that showed data from some of the 1,000 cabs in the program along with the percentage of improvement on each of the particulates – NO, HC and CO. He also presented the laboratory testing data from CARB. The table indicates that the Before and After data received to date correlates with the Proposed Model data.

Assumptions Made for the Calculations:
- Analyze each DTC and the corresponding number of days MIL is "On" (when vehicle is out of compliance)
- Assume that without Networkcar program, vehicle would drive on average for six months with MIL "On"
- Assume average "before and after" emissions data based on CARB laboratory testing
- Use average "before and after" emissions data to calculate total NOx reduction

Differences in Proposal vs Program to Date:
Mr. Glancy explained the proposed versus program to date data. At the assumed 70,000 annual mileages for vehicles in the program, 102 tons of NOx would have been reduced to date at a cost of $6,373. Based on the data received from Oakland, they are seeing an average of 56,000 annual mileage for the Oakland cabs. This would reduce the cost per ton significantly. During the last six months there has been a reduction of 2.5 tons of NOx specific to the 120 cabs in Oakland. Non-compliant vehicles are repaired within 30 days.

Average Days Before Repair:
There is a lot of variance based upon the actual cab company and how they are voluntarily reacting to this program. Some cab companies remain in the program for 30 days; others remain for approximately three months. There is a three months' savings on the NOx versus the five months of savings. If the ratio can be reduced to 30 days, there will be a higher correlation with the cost per ton and the reduction in NOx on these vehicles.

Program Enforcement:
- Networkcar's technology quickly identifies and monitors out of compliance vehicles
- Goal is to quickly identify non-compliance and to persuade prompt repair of vehicle
- The main program issue to date has been the enforcement of the quick repair of identified polluting vehicles. Networkcar does not police
- Bay Area program launched in October 2003 at Oakland Airport

Specifics of the Bay Area Program:
- In October 2003 all of the taxis operating at the Oakland Airport, 42 companies in all, were enrolled in the ERCP facilitated by Networkcar
- Each company is monitored for safety and proper functioning by the Oakland City Police

- The vehicles that are operating at the airport with a MIL light on for 30 or more days are subject to having their Medallion (City and Airport taxi operating certification) revoked by the Oakland Police Department until the vehicle is operating in adequate condition
- The Port of Oakland authorizes revocation of the taxi operating privileges at the airport when each taxi is non-compliant
- Roughly five or more notices are issued every week to violating taxis
- Currently there have been taxi companies repairing their vehicles, yet the smog check information has not been returned as frequent
- The goal of the pilot at Oakland airport is to quantify a substantial reduction in emissions from high mileage vehicles and possibly expand into the taxis operating in the City of Oakland

Summary:

- Remote Emissions-Monitoring can return significant NOx reductions
- Cost per ton saved directly correlates to annual mileage of the vehicle and time of repair
- Technology is cost effective for NOx reduction
- Enforcement at Oakland Airport is reducing repair time

The cost per unit is $500, including labor, and $15 per month for the service.

Mr. Kurucz inquired if there was any information available on the enforcement activity that is actually being done by the officers. Mr. Glancy stated that he did not have any data available on this.

Mr. Glueck inquired about the reliability of the monitoring equipment. Mr. Glancy responded that it is very good. The satellite-based piece is GPS-related technology. Regarding the transmission of the data, a terrestrial network is used; it is a data-only network and it does not compete with voice traffic. There is also a feature called store and forward within the unit. If the vehicle drives into intermittent cellular coverage, it stores the information when it comes back and transmits that information back when it is out of coverage.

Mr. Glueck requested information on Networkcar's diesel applications.

Recommendations:

Mr. Glancy recommended the Committee: a) help educate stationary sources in the district on the availability of this mobile source technology, and b) implement an enforcement rule to persuade timely vehicle repairs identified by this technology within the district.

6. Committee Member Comments/Other Business.

Mr. Dawid stated that, at the Committee's August meeting, he would like to receive a report from Tom Addison, Advanced Projects Advisor, on the bills pending in legislation, specifically on the status of Senate Bill 849 and the reasons as to why the Association of Bay Area Governments (ABAG) opposed it. Mr. Dawid briefly provided an overview of SB 849 to the Committee. He felt that it was very important for the Advisory Council to understand the greater concept of regional planning in the Bay Area. He was concerned that ABAG objected to the Air District's incorporation into the Joint Policy Committee, and would like to have a better understanding of why they objected to the Air District's participation.

7. **Time and Place of Next Meeting**. 9:30 a.m., Tuesday, August 3, 2004, 939 Ellis Street, San Francisco, CA 94109.

8. **Adjournment.** 11:45 a.m.

Neel Advani
Deputy Clerk of the Boards

AGENDA NO. 3

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Advisory Council Public Health Committee Meeting
12:30 p.m., Wednesday, May 12, 2004

1. **Call to Order – Roll Call.** 12:30 p.m. Quorum Present: Linda Weiner, Chairperson; Diane Bailey, Sanjiv Bhandari, Elinor Blake, Jeffrey Bramlett, Victor Torreano, Brian Zamora.

2. **Public Comment Period.** There were no public comments.

3. **Approval of Minutes of April 19, 2004.** Chairperson Blake stated she would present two minor typographical edits to the Deputy Clerk after the meeting and moved the minutes be approved; seconded by Mr. Torreano; carried unanimously.

4. **Discussion of the District's Proposed Community Risk Reduction Program (CRRP) and Toxics New Source Review Rule-Making.** Chairperson Weiner stated that today the Committee would discuss the staff presentations on these topics made at the previous Committee meeting.
   In response to questions from the Committee, Gary Kendall, Technical Division Director, and Brian Bateman, Engineering Division Director, provided the following answers:

   The District will develop a one-kilometer (1 km) gridded toxics emission inventory for the Bay Area that will include stationary, mobile and area source emissions. From this plot, one or two communities with greatest emissions density will be chosen for monitoring for the cumulative risk assessment pilot project that will address cumulative emissions from stationary sources. These data will be compared with incremental risk assessment data to determine whether there is a significant difference between incremental and cumulative risk assessment approaches.

   a) Targeted action plans are not limited to the areas chosen for cumulative risk assessment monitoring, and can be applied more broadly to areas with greater emissions on the grid.

   b) The definition of disproportionately impacted communities has not yet been established. The advisory committee for the CRRP will no doubt evaluate this criterion.

   c) The South Coast AQMD developed a 2 km gridded emission inventory that also incorporated photochemical modeling for mapping emission concentrations. Inclusion of photochemical modeling requires complex meteorological inputs that include broad annual averages and specific data sets with variations by day of week and time of day.

   d) The CRRP advisory committee should review the suggestions that staff coordinate with the San Mateo County Health Department's public outreach work concerning health disparities,

as well as with the staff from other city and county health departments in the Bay Area, and with the appropriate contact persons involved with the Bayview Hunters Point project.

e) The project advisory committee should also review Ms. Blake's suggestion that the District's outreach include a staff member that is a formally trained health educator with inter-agency and community organizing skills, since the CRRP will contain a public outreach component.

f) Staff will use California Air Resources Board (CARB) procedures in forming the model for the cumulative risk assessment. The 1 km gridded emission plot will not include modeling.

g) The list of suggested participants to the advisory committee to the project is prototypical and adding a health official to it is certainly doable. The Public Health Committee could submit questions for the advisory committee to review as it works its way through the issues. The advisory committee should also refer questions to the Public Health Committee for review. The suggestion that one Public Health Committee member sit on the advisory committee and report back to the Public Health Committee as liaisons is well taken.

h) The program time line is for the proposal to be considered by the Budget & Finance Committee and then the Board, which is scheduled to hold two public hearings on the budget in June. Since the CRRP was last discussed with the Committee, one of the positions proposed for this program will not be funded per direction of the Budget & Finance committee, and that work may be contracted out. The dollar amount proposed for the program appears to be the same at this time. The point at which the program features could be reviewed is not yet known and will depend on when the advisory committee is assembled. Some technical aspects are moving forward including the purchase of a carbon analyzer and the submittal of archived PM10 filters for analysis by Desert Research Institute.

i) The results from the CRRP will form the basis for future policy development.

The Committee members noted that the framing the tasks of the CRRP offers the District an opportunity to reach out into the community, starting with the staff of health departments and coordinating with frameworks they have developed. Going forward with the technical processes is timely and will help meet community expectations to produce the product promptly. While the project will form the basis for policy, the process will take considerable time to complete.

Mr. Zamora requested that these comments be brought to the full Council for discussion, preceded by an abbreviated presentation from staff on the CRRP. Ms. Blake suggested the minutes from this meeting form the basis for identifying the key discussion issues, along with the April 19 minutes at which the CRRP was discussed in greater detail in a previous iteration.

Chairperson Weiner reminded the Committee that its original charge was to review TNSR rule making, and that it should be kept apprised of the rule-development process as it goes along. Ms. Bailey suggested that that staff consider making special provisions for sensitive receptors (children, the elderly, and the sites they frequent, schools, daycare centers, hospitals, etc.) and that stricter limits be set for such areas. The South Coast AQMD white paper on cumulative risk refers to this type of approach. Mr. Bateman replied that while staff has received comments that allowable risk levels were too high, so far none have suggested that these are too high for

sensitive receptors. While staff considers the current risk levels health protective, it can certainly review this matter. The white paper on cumulative risk addresses emissions near schools, and the District has fairly good data set for this category.

Mr. Zamora indicated that health department staff could identify in a discussion with District staff the location of senior citizen centers, convalescent homes and hospitals. Mr. Bateman noted that the rapid provision of such information for 50 permit applications a month for purposes of completing risk-screening analysis is challenging within the tight schedules for permits. Data inputs also need to be in electronic form and are most problematic when they concern land-use data. Current data sets also do not provide reliable data on sensitive receptors. However, the District's risk assessment approach is to treat everyone as a sensitive receptor and to adopt risk levels that protect them. An approach that includes differential standards would require very large resources to accommodate the vast increase in analytical complexity.

Ms. Blake replied that some counties are updating their emergency response capability and know the location of the sensitive receptors. The Office of Emergency Services may have data in this field as well. Mr. Bateman replied that for microscale analysis these would require detailed geo-coding. Ms. Bailey opined that the public may expect the District to develop this data. Ms. Blake noted that this is also a city and/or county zoning issue. She suggested that the advisory committee include a member with expertise in Graphical System Interface software.

Chairperson Weiner called for public comment. Dennis Bolt, Western States Petroleum Association, stated that these issues involve reciprocity. Businesses cannot be sited unless they are approved by local authority as to their location with respect to schools, daycare and senior citizen centers. Office parks in Silicon Valley are being encouraged to bring in daycare centers. The public health standard in the Bay Area is strict. To include these issues in TNSR rule-making is one-sided and regionally detrimental, and will discourage business from locating in the Bay Area and encourage jobs to go overseas.

Ms. Bailey replied that the issue concerns more of a safety net that would prevent uninformed decision making about co-locating of facilities that pose health risks. The District should have authority to intervene with a rule that would prohibit unhealthy co-location from occurring and past mistakes in siting from re-occurring. Mr. Bolt replied that, near where he lives, two gas stations, one dry cleaner and a daycare center are found on one street corner. There may be emissions regulations for facilities near schools, but the land-use field provides considerable flexibility for co-location. Mr. Bramlett added that there are some rules that govern child-care centers where pre-approval is required for establishing an evacuation point.

5. **Committee Member Comments/Other Business.** There were none.

6. **Time and Place of Next Meeting.** 1:30 p.m., Monday, July 19, 2004, 939 Ellis Street, San Francisco, California 94109.

7. **Adjournment.** 1:40 p.m.

James N. Corazza
Deputy Clerk of the Boards

AGENDA NO. 4

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

DRAFT MINUTES

Advisory Council Technical Committee
9:30 a.m., Tuesday, June 3, 2004

1. **Call to Order – Roll Call.** 9:36 a.m. Quorum present: Louise Bedsworth, Ph.D., Chairperson, Sam Altshuler, P.E., Robert Bornstein, Ph.D., William Hanna (9:44 a.m.), Stan Hayes, John Holtzclaw, Ph.D., Norman A. Lapera, Jr.

   Also Present: Harold Brazil (9:40 a.m.).

2. **Public Comment Period.** There were no public comments.

3. **Approval of Joint Technical & Air Quality Planning Minutes of April 6, 2004.** Mr. Lapera requested the following correction on the bottom of page two under his comments, last sentence, 11,000 miles of trails should be 1,100 miles of trails. Mr. Lapera moved approval of the minutes; seconded by Dr. Holtzclaw; carried unanimously.

4. **Presentation on EMFAC 2002.** Amir Fanai, Senior Air Quality Engineer, Planning Division, presented "EMFAC and San Francisco Bay Area Ozone Planning. Mr. Fanai provided a brief history of EMFAC and noted the following:

   - In 1987 a Van Nuys Tunnel Study showed that EMFAC7D underestimated CO and Reactive Organic Gases (ROG) emissions for California On-Road Motor Vehicles by factors of 2-3.
   - For Photochemical Modeling in 1991, Bay Area ROG emissions for 1989 from EMFAC7EP were scaled up by 90% to improve the photochemical model performance
   - EMFAC7G (1995) underestimated 1990 emissions for the Bay Area by 40% for ROG relative to Fuel Based Inventory that came out at the time.
   - The current version, EMFAC2002 (April 2003), shows better agreement with Fuel Based Inventory for Year 2000 but discrepancies still exist.

   Mr. Fanai's presentation included the following topics:

   EMFAC2002 FEATURES:
   Inventories for 1970 to 2040 can be projected provided that travel emission inventory data are available. Weekend emissions are not estimated because of lack of data. The categories include:
   - 13 vehicle classes
   - 45 model years within a calendar year
   - 69 geograpahic areas
   - 24 hourly periods
   - 12 months
   - 3 seasons for planning

- 7 pollutants (HC/CO/NOx/PM/CO2/Lead/Sox)
- 7 processes that include running exhaust, start emissions, idle emissions, running losses, hot soak, diurnal emissions and resting losses.

CO2 and Methane have been added for Green House gases, and PM2.5 added for new ambient standards.

VEHICLE CLASSES:
With regard to vehicle classes in EMFAC, Heavy Duty trucks have been divided into light, medium and heavy-duty classifications to better track NOx emissions. Other classifications include Passenger Car, Line-Haul Vehicle, Urban Bus, Motorcycle, School Bus and Motor Home.

ON ROAD MOTOR VEHICLE EMISSIONS FOR SUMMER 2000:
ROG emissions total 207 tons per day, of which heavy duty diesel trucks contribute 3%. The Vehicle Mile Travel (VMT) from this class of vehicles is 3-4% of total Bay Area VMT. In the Bay Area 96-97% of VMT are attributable to gasoline vehicles, which produce 97% of ROG emissions. Diesel vehicles do not have a large impact on ROG emissions. ROG emissions are not weighted for reactivity.

NOx emissions are 351 tons per day, of which 41% are from heavy-duty diesel trucks (including buses and motor homes). Despite the low VMT by heavy-duty trucks, over 40% of NOx emissions are from heavy-duty trucks, most of which run on diesel.

BAY AREA SUMMER 2000 EMISSIONS (ROG: 505 TONS/DAY; NOx: 630 TONS/DAY):
On-road motor vehicles are responsible for 41% of the total ROG inventory. Traditionally biogenic emissions are not included. On-road motor vehicles are responsible for 56% of NOx in the Bay Area. Overall, 25% of NOx in the Bay Area are from heavy-duty diesel trucks. Three to four percent of VMT, produce 25% of NOx emissions. The fuel-based inventory provides an independent estimate of on-road motor-vehicle emissions.

EMFAC2002 VS. FUEL-BASED INVENTORY – ROG EMISSIONS (TONS/DAY) SUMMER 2000:
A fuel based inventory helps to assess accuracy of EMFAC projections. The Central California Ozone Study (CCOS) domain is in San Joaquin, San Francisco, and Sacramento, and the fuel based inventory (related to work of former Advisory Council Member Rob Harley of UC Berkeley) shows higher ROG emissions than what EMFAC projects.

EMFAC2002 VS. FUEL-BASED INVENTORY – NOx EMISSIONS SUMMER 2000:
The model does a good job for Sacramento and San Francisco, though emissions for the Bay Area appear to be slightly overestimated. The greatest discrepancy is in the San Joaquin Valley – approximately 35%. When the numbers came out, staff did a simple scaling and ran the photochemical model, and the model did not show changes in ozone. Staff was working on meteorological data at the time and will repeat this work again when finished with the met data. Fuel sales data suggest that diesel sales have increased since 1990, and the model is not capturing this for the San Joaquin Valley area. The California Air Resources Board (CARB) is looking into this as well.

The District has been very proactive in wanting to improve emissions inventory for on-road motor vehicles and it is apparent that for ROG there has been a change of nearly 100% from an old version of the model. Emissions have increased for every new version of the model and the District tries to obtain the best inventory possible at all times.

CHANGES IN BAY AREA ON-ROAD MOTOR VEHICLE EMISSIONS ESTIMATES FOR YEAR 2000:

Dr. Holtzclaw noted that there are two things at issue: (1) whether or not the District is properly estimating the emissions of the vehicles that are out there now, and (2) whether or not the projections are accurate regarding how rapidly the emissions will decrease in the future due to the assumptions of fleet turnover, cleanliness of cars and vehicle mix in the future.

Dr. Bornstein stated that the fuel emission surveys are based on how much fuel is sold. People drive differently on Super Highways. They may buy their gasoline in one place and travel out of that area; therefore, the emissions from that sale would not be reported in the location it was sold. He inquired if this issue was built into Dr. Rob Harley's study. He was of the opinion that urban counties versus Super Highway counties could, perhaps, be treated differently since the fuel-based approach is giving higher values of emissions and ignoring the drive-through, which may be one of the reasons for the problem. He suggested that, perhaps, staff could look into this.

BAY AREA ON-ROAD MOTOR VEHICLES 1990-2000 EMISSION REDUCTIONS: EMFAC2002 VS. FUEL-BASED INVENTORY - 1990 and 2000:

The EMFAC2002 emission reduction for the Bay Area is more optimistic than fuel based inventory. EMFAC 2002 tends to overestimate NOx. Mr. Fanai pointed out that when projections are made in 1990 for the year 2000, there are some assumptions being made about changes of VMT and speed, congestion and high speed travel, and vehicle deterioration. If a mistake is made in predicting the emissions for 1985 vehicles in the year 2000, then that will be reflected. The 2000 fleet has less of the older vehicles in it so that the margin of error becomes less; and then as one projects into the future for the year 2020, most of the vehicles are high tech and, therefore, there is a much better chance of predicting their emissions 20 years from now than when predictions were made in 1985 for the 1975 vehicles.

Dr. Holtzclaw expressed a concern that when he reviewed the Clean Air Plan for the past years and then looked at the projections for the future, they all showed a strong reduction in emissions for the future which have not yet materialized; but for the present year, the emissions were still high. He felt that it was important to address this issue. In response, Mr. Fanai pointed out that there is definitely a downward trend in emissions that can be quantified.

POSSIBLE SOURCES OF UNDERESTIMATION AND PLANNED IMPROVEMENTS:

Mr. Fanai pointed out that there would be extensive remote sensing within the next 12 months by CARB and the Bureau of Automotive Repair (BAR) to improve fleet characterization with regard to old vehicles and high emitting vehicles. The benefits of the Inspection and Maintenance Program (Smog Check) may be over estimated within the model, and that is why this program is being re-evaluated every two or three years. One of the evaluation reports has been released recently and is currently being reviewed. CARB continues to do In-Use Vehicle Testing and hopes that this will also improve the new version of EMFAC that is planned for Spring 2005.

Another possible source of underestimation could be the underestimation of congestion and high speed travel. EMFAC does not have emission rates for vehicles going over 65 miles per hour because the data for how much of the VMT is done at those speeds is unavailable. Also, there has not been extensive testing done at higher speeds. One can only make estimates of what that might be.

Regarding underestimation of heavy-duty truck travel that affects NOx emissions, ARB is looking into this for the San Joaquin Valley. They are also analyzing hourly variation of truck travel (peak vs. off-peak hours). Dr. Bornstein inquired if trucks coming in from Mexico, which are not under U.S. emission standards, are included; and how many of these trucks make it into the Bay Area. Mr. Fanai stated that the figures do include vehicles from out of state. Dr. Holtzclaw stated that he was under the impression that most trucking companies now use GIS equipment to determine truck location and wondered if ARB had access to such information. He suggested that staff look into this.

POSSIBLE SOURCES OF UNDERESTIMATION AND RELEVANT CONTROL PROGRAMS:
CARB's Smog Check program directs high emitters to Test-Only Stations and the Repair Assistance Program from BAR is also still in effect. The possible elimination of the 30-year Rolling Exemption is the subject of current legislation. The evaluation of the Smog Check Program will make sure that there is a good handle on emissions. Vehicle Buy-Back and Smoking Vehicle Programs are also still in effect.

For the Underestimation of Congestion and/or High Speed Travel, the Transportation Fund for Clean Air and Spare the Air Programs help towards this. Bay Area emissions will continue to decline according to the inventory and the prediction is that there will be fewer emissions in the year 2006 compared to 2000.

Mr. Hayes stated that not all ROG is equal. For example, formaldehyde accelerates the photochemical process. Recent toxicity data suggests a strong link between formaldehyde and certain types of cancers and leukemia. Therefore, it might be useful to look at some of these other species for more than just ozone planning.

Dr. Holtzclaw asked if any data is available on vehicles traveling at high speed. Mr. Fanai responded that ARB does not have test data for vehicles traveling at speeds over 65 mph.

Dr. Bornstein inquired if there are any economic data in the emission estimates and whether or not any attempt has been made to include economic factors in episode modeling to adjust the emissions. Harold Brazil, Advisory Council Member, and a staff member of Metropolitan Transportation Commission (MTC), stated that MTC, periodically, has to do a conforming analysis on its transportation improvement program and regional transportation plan. One of the regulations that they have to follow, when doing this analysis, is to use the latest planning assumptions. Therefore, a lot of the inventories that the Air District has and what has been submitted by MTC, in the past, for the State Implementation Plan (SIP) and for photochemical modeling work include the previous version of the socio-economic forecast, which are projections of the year 2000 that the Association of Bay Area Governments (ABAG) developed. However, to do the conforming analysis MTC had to use projections for the year 2003 and that data reflected the dot com bust. Therefore, one of the differences that will be seen when the speed distribution data is put into the EMFAC model, is a speed-up of the speeds, basically because congestion goes down when the number of jobs decline. Hence, there is a subtle reduction in the inventories and there is a slight increase in NOx emissions.

David Souten, ENVIRON, commented on some of the charts presented by Mr. Fanai. He stated that in the case of air pollution, the Bay Area is both politically and physically connected to the San Joaquin Valley and Sacramento areas. The charts presented were focused on the accuracy of the emissions in the entire Bay Area. However, the accuracy of the emission inventories is also important for San Joaquin Valley and Sacramento because there are air quality considerations that cross over the air pollution control district boundaries that may affect regulation development in the Bay Area.

Peter Hess, Deputy Air Pollution Control Officer, Gary Kendall, Director of Technical Services, and Fanai responded to Committee members' questions and comments, as follows:

a) ROG emissions are not weighted for reactivity. Based on a study that Alan Gertler of DRI did a few years ago regarding VOC emissions from diesel versus VOC emissions from gasoline-powered vehicles, while the emission rates are different for grams per gallon or grams per mile, when the speciation profiles for each of the two sets of emissions are analyzed and a reactivity weighted analysis is conducted, it turns out that they are very similar. They do not emit the same grams per mile or grams per gallon, but if a gram of VOC emission is analyzed and then one looks at all the different compounds that comprise those emissions and then apply the reactivity weighting factors, it turns out that they are very similar. (Altshuler)

b) The fuel-based inventory is related to the work conducted by Dr. Rob Harley. The latest work was done specifically for the CCOS study. (Altshuler)

c) Fuel-based inventory is not aggregated by vehicle type. Only gasoline and diesel are aggregated. It seems that diesel emissions may be underestimated. Fuel sales have been increasing much more rapidly than gasoline sales; therefore, it is possible that at least for the San Joaquin Valley the emissions are not captured due to the higher sales. (Altshuler)

d) Emissions for 2000 from the EMFAC7EP, 7F, 7G EMFAC2000 and EMFAC2002 were presented. These are the emission estimates that came out of the model at the time. The Bay Area Air District is one of the few districts that actually referred to the underestimation of the motor vehicle emissions in its plan, and the District was hoping that the emissions estimates would improve. (Holtzclaw)

e) The differences between EMFAC2002 and the fuel-based inventories, both for ROG and NOx, are within the margin of error. (Hayes)

f) Mr. Fanai stated that he was unaware of any recent work that addressed the issue of compiling a list of weak points or assumptions for each of the methodologies. (Bornstein)

g) Dr. Bornstein inquired if the District had developed any simulations using both emission inventories to see which one produces a better ozone field, and whether or not Dr. Harley's emission inventory had been checked for this. He also stated that Dr. Harley's emission inventory is being used in a study at Lawrence Berkeley Laboratory, and that the Livermore ozone peak was well simulated. He suggested that it would be good to know the results of Dr. Harley's simulations and to find out if they are pleased with the results. Mr. Fanai stated that he did not have a conclusive answer on this issue and that he would follow up with Dr. Harley regarding the results of his study.

h) The information about the number of vehicles on the road was obtained from the Department of Motor Vehicles (DMV). Dr. Bornstein indicated that there are a lot of unregistered vehicles in California, and probably many of them are old vehicles because there are many poor people who cannot afford insurance and registration. Therefore, it is possible that the number of high emission vehicles is underestimated because they may not include estimates of unregistered vehicles. Mr. Fanai clarified that EMFAC does allow for unregistered vehicles. The DMV registrations include some unregistered vehicles. The reasons for the change from

EMFAC2000 to EMFAC2002 were based on the fact that ARB was criticized because it was overestimating the number of unregistered vehicles. (Bornstein)

i) Mr. Altshuler stated that when an engine manufacturer certifies a diesel engine, it is done on a grams/brake/horsepower hour basis, and this is different from grams/mile. He wanted to know what the current ratio is assumed in this conversion. Mr. Fanai stated that he would obtain the conversion ratio numbers for Mr. Altshuler.

j) Mr. Fanai said that he was not aware of NO2 emission calculations being included in EMFAC for the future, but was of the opinion that ARB is open to suggestions like that, such as the addition of methane and CO2, and that he would recommend NO2 to them, if so desired. (Altshuler)

k) Mr. Hayes stated that each time one goes through the planning process, there are major changes in the inventory, and gradually over time, the changes get smaller. He wondered if staff had a sense of how close the District is with the estimates, and the actuality of numbers, as shown in the final chart of this presentation.

Mr. Fanai stated that he is optimistic that emission estimates are improving and will continue to improve. As the older vehicles decrease in the system, the estimates will improve, and it will be easier to know what the true emissions might be. Because of the Enhanced Smog Check Program, it is predicted that by the year 2006 there will be additional reductions – 14 tons of NOx and 10 tons of ROG. These numbers are currently built into the model, and into the emission projections for the year 2006.

l) Mr. Altshuler inquired from Mr. Hess whether he had read a report recently regarding a potential change in ozone formation as a result of dieselization of passenger vehicles. There is a potential that the Europeans are leading that charge and there has been some modeling done to assess what would happen if the U.S. had more diesel vehicles like Europeans. They looked at the increase in NOx and NO2 and thought that that would increase the ozone.

Mr. Hess stated that he had seen the report. This report describes the penetration of diesel vehicles into the passenger car fleet. To draw conclusions for the Bay Area based upon a national report is indicative and gives the District a heads-up. Large quantities of passenger vehicles are coming into the Bay Area from the Sacramento area, and especially the San Joaquin Valley, on a daily basis. Many of the automobiles that are being used in the choice of the commute are not the best-kept ones. They are the "commute" vehicles. The District needs to look at the emissions that are coming from these vehicles into the Bay Area from Tracy, Manteca and Stockton. He felt that in the future these might be diesel passenger vehicles. Staff is working closely with both the San Joaquin Valley and the Sacramento districts in regard to controlling the emissions from heavy-duty diesel trucks and actively looking at various different control strategies for the heavy-duty diesel truck fleets.

Mr. Hess reminded the Committee that the Technical Committee, as well as the full Advisory Council, provided the District with very good ideas regarding the Smog Check Program and they are before the Inspection & Maintenance Review Committee (I&M). Once the I&M Review Committee looks at the existing program, Dick Wiser, Chair of the I&M Review Committee, will unveil the Council's suggestions on I&M improvement.

m) Mr. Hanna noted that BAR had projected that it would cost $8 to $10 more per Enhanced Smog Check, but he is seeing $30 differences in the Napa area.

5. NOx Controls and Ozone Formation.

Dr. Saffet Tanrikulu, Research & Modeling Manager, presented the "NOx Control As They Relate to Ozone Formation in the Bay Area." Mr. Hess stated that the presentation had interesting insights, both for the Bay Area ozone and transport, and welcomed the Committee's input on this topic. Dr. Tanrikulu addressed the following topics:

- Ozone and PM2.5 chemistry
- NOx controls as they relate to ozone formation in the Bay Area
- NOx transport to neighboring districts
- NOx-PM2.5 relation in the Bay Area

OZONE CHEMISTRY (Page Nos. 3 & 4 of Presentation):

NO2 splits under the sunlight to produce NO + O. Then O reacts with O2 to produce O3. O3 reacts with NO to produce NO2 and O2. At the end of this reaction there is neither net gain nor loss for ozone. However, in the presence of hydrocarbons, HO2 and RO2 radicals are produced. These will convert NO to NO2, without losing ozone; thus, ozone concentrations will increase.

Dr. Tanrikulu pointed out the following:

a) The reaction rate for the last two equations, as shown on the chart on Page No. 4, is about 400 times faster than the reaction rate of the third reaction (ozone + NO). However, the conversion rate of NO to NO2 depends on the reaction rate as well as the concentration of the species. Since ozone concentration is much higher than HO2 and RO2 concentrations under normal conditions, NO is converted to NO2 about four times faster through the reaction of ozone + NO.

b) NO2 splits into NO + O to produce ozone, and NO is again converted to NO2; in the Central California Ozone Study Emissions Inventory, NO is converted to NO2 2.6 times before NO2 becomes something else, so this cycle goes around about 2.6 times. This is a lot lower compared to the cycle that is observed by Professor Harvey Jeffries over Houston, which is about 4 to 4.5 times, and over Atlanta, which is about 6 times. This implies that hydrocarbons in the Central California Ozone Study domain are less reactive compared to those in Texas and Georgia. One other possibility is that the reactivity of hydrocarbons may be underestimated in California because photochemical models underestimate ozone there.

c) Scientists have been looking at the conversion rate among the last three reactions and there are various methods to see which reaction is going to convert NO to NO2 faster. There are a number of research papers available on this issue and the most common way of looking at the comparison is the VOC/NOx ratio. If the VOC/NOx ratio is less than 6.5, the area is considered to be rich in NOx, and if the ratio is higher than 6.5 then the area is rich in hydrocarbons. This means that if one is in the region where the VOC/NOx ratio is less than 6.5, ozone + NO is going to be more effective, which will not increase ozone concentration; if, however, one is in an area rich with hydrocarbons, then HO2 + NO and RO2 + NO will be

important. If the VOC/NOx ratio is over 11 or 12 then that means that there is usually insufficient NOx in the environment to produce ozone.

d) During the daytime, NO2 combines with OH to produce nitric acid. This is a daytime reaction because OH is produced during the daytime. At night, NO2 combines with ozone to produce nitric acid as well. Nitric acid will react with ammonia, producing ammonium nitrate, which is PM2.5. About 30% to 40% of PM2.5 concentrations in the Bay Area are produced through this reaction. There are several main sources that produce ammonia such as feedlots, catalytic converters on cars, natural decay of vegetation and wildlife. NOx is the main source for nitric acid.

VOC/NOx 2000 (Page No. 6 of Presentation):
Dr. Tanrikulu showed VOC/NOx ratio from four stations: Bethel Island, Patterson Pass, Sunol and San Jose. The table shows measurements from midnight to 3 a.m., 5 a.m. to 8 a.m., Noon to 3 p.m., and 4 p.m. to 7 p.m. The morning hours from 5 a.m. to 8 a.m., indicates that the VOC/NOx ratio was less than 6.5, except for Bethel Island. During Noon to 3 p.m., the ratio increases, mostly due to additional biogenic VOC emissions, which are a function of temperature – as the temperature increases, there are more biogenic emissions.

EKMA DIAGRAM (Page No. 7 of Presentation):
This graphic is based upon modeling sensitivity simulations that were conducted in 1989 with 1989 emission inventory, and projected to the year 2000. Based upon the 2000 emissions inventory, there were 648 tons of NOx and 554 tons of VOC emissions. This produced about 139 ppb of ozone in Livermore. The federal standard is 124 ppb. If hydrocarbon emissions are reduced about 15%, they will reduce ozone to 124 ppb. Also, the diagram shows that when NOx is reduced by about 40%, it is likely that ozone concentrations will increase in Livermore. The diagram also points out that if NOx is reduced in the Bay Area by 2.6 tons per day, VOCs need to be reduced by about 1 ton per day in order to avoid ozone disbenefit. The Bay Area's emissions currently are a lot different than they were in 1989 because there were more reactive hydrocarbons in 1989. If the EKMA Diagram is created using today's emissions inventory, the disbenefit is expected to be smaller.

The model indicates that there may be a potential disbenefit if only NOx is reduced. Dr. Tanrikulu made some estimates to motor vehicle emissions, for example, if 2.6 tons of NOx are reduced from motor vehicle emissions, then VOCs are automatically reduced by about 2.1 tons. Therefore, reducing motor vehicle emissions will not lead to disbenefit in ozone concentrations. The natural hydrocarbons are not included in the EKMA Diagram because they are not considered controllable.

NUMBER OF OZONE EXCEEDANCES (1991-2003) (page No. 8 of Presentation):
This table shows ozone exceedances from 1991 to 2003 for days of the week, for the 1-hour and 8-hour standards. During Saturday, Sunday and Monday, the number of ozone exceedances is higher than weekdays. During the weekends, emissions are lower compared to weekdays because most of the heavy-duty utility trucks are not operating during the weekends and, probably, NOx is reduced more than VOC during the weekend. This is also supporting evidence for model results on the potential disbenefit of reducing NOx alone.

Dr. Bornstein pointed out that assuming that these differences are statistically significant, there are two things that stand out from this table: (1) that Monday is a continuation of the weekend, and so it is better to look at it from Tuesday to Monday. The fact that Monday is a continuation of

Saturday and Sunday, implies a time lag. If it were just proportional to the emissions, Monday would not be the same or a continuation of Saturday or Sunday. There is some sort of time lag in which the exceedances, on a given day, have something to do with the emissions on the previous days; (2) Friday also stands out. Therefore, Mondays and Fridays show how they are related to a time lag, which is connected to the weekend.

Mr. Hess pointed out that during the summer season, a lot of people travel on Fridays, which causes the traffic pattern to change considerably. Fridays, in the summer time, are almost a weekend. Additionally, on Sunday evenings, there is very heavy traffic returning to the Bay Area. Dr. Bornstein commented that the Sunday evening returning traffic would not affect the Sunday afternoon ozone, but if the precursors stay around, then Mondays might be affected.

MEAN NOx Or NOy IN TWO 5-DAY SUMMER PERIODS, 2000 (Page No. 9 of Presentation):
This graph shows the NOx and Ozone measurements made near the surface levels at the following stations: San Francisco (SFA), Livermore (LVR1), Concord (CCD), Pittsburg (PBG), Vallejo (VJO), Bethel Island (BTI), Lamby Road (LAMB), Patterson Pass (PATP), Davis (DVS), Sacramento, 13th Street (S13), Stockton (SOH), Tracy (TPP), Modesto (M14), Fresno Drummond Street (FSD) and Fresno First Street (FSF).

The model suggests that, for the Bay Area, it is going to be more beneficial if both VOCs and NOx are reduced for ozone. If NOx reductions are slow in the Bay Area, it will not impact ozone in the Sacramento and San Joaquin Valley. The chart shows two measurements taken during the summer periods, July 10-14 (low ozone concentration period) and July 28-August 1 (moderate ozone concentration period). The difference between NOx and NOy are displayed at Bethel Island – NOx is about 20% to 25% less than NOy. In order to compare LAMB and PATP where only NOy measurements were made, against other stations, it is assumed that the numbers will be 20% or 25%. These stations were selected along the transport corridors, from the Bay Area to Sacramento and San Joaquin Valley.

In the Livermore and Concord areas there are about 27 to 32 ppb NOx concentrations. If the rate of reduction in the NOx concentrations from Concord to LAMB and Livermore to PATP continues from LAMB to Sacramento and PATP to Fresno, transport from the Bay Area to Sacramento and San Joaquin Valley will be at a minimum level.

Another point that Dr. Tanrikulu made with this graph is that if NOx concentrations are compared between high or moderate ozone days, and low ozone days, the NOx concentrations are a lot higher because there was a lower inversion layer during the high ozone period. Mr. Hess stated that motor vehicle emissions are at a tail-pipe level, which is under the boundary level emitted at a very hot temperature. This results in a mixture of VOC and NOx.

Committee members opined that this graph addresses some of the issues that the Committee has been struggling with in the past, and felt that the information it relayed was very useful.

MEAN OF DAILY MAX OZONE IN TWO 5-DAY SUMMER PERIODS, 2000 (Page No. 10 of Presentation):
This graph shows the ozone concentrations from the two 5-day periods. However, it is incomplete and staff is still waiting for information from ARB for Lamby Road and Patterson Pass in order to complete it.

PM2.5 JULY-AUGUST, DEC-JAN AVERAGES FOR BAY AREA SITES, 1999-2003 (Page Nos. 11 and 12 of Presentation):
Staff studied the average PM2.5 concentrations over the Bay Area stations during the summer and winter periods. Measurements of PM2.5 concentrations started in 1999 in the Bay Area, and this graph shows the results from 1999-2003. In 2002, PM2.5 concentrations were the highest. Also, the average PM2.5 concentrations are very close to each other at these stations, even though the stations are widely distributed throughout the Bay Area. PM2.5 concentrations are low during the summer periods. During the winter periods the concentrations are significantly different among the stations – about 15 to 25 mg/m3.

NOx DECEMBER-JANUARY AVERAGE FOR BA PM SITES (Page No. 13 of Presentation):
NOx is one of the precursors of PM2.5 concentrations. San Jose, for example, has the highest NOx concentrations compared to the other stations, and Bethel Island has low NOx concentrations compared to the other stations. The issue of how NOx is impacting the formation of PM2.5 still requires a lot of research and staff is working to understand how NOx control may affect PM2.5 concentrations.

(PM10) NO3 DECEMBER-JANUARY AVERAGE FOR BA PM SITES, 1999-2004 (Page No. 14 of Presentation):
This graph shows the amount of NOx that is converted to nitrate. It does not necessarily show that there are high concentrations of PM2.5 where there are high concentrations of NOx. Therefore, it is unclear from the figures as to how much NOx reduction will benefit PM2.5 concentrations immediately. Dr. Tanrikulu explained that there is additional research to be done to better understand the relation between NOx and PM2.5.

Mr. Kendall explained that the chart shows only a component of PM10, whereas the previous one shows the total of PM2.5. Because the District has the attainment for the national standard in the Bay Area, samples are taken only once every six days, whereas for the PM2.5 there are much more frequent samplings taken every day during the winter at several of the sites, so there is a greater chance of capturing them.

CAMx LAYER 1, O3 DISTRIBUTION (Page No. 15 of Presentation):
This diagram is based on ongoing modeling work. Staff is working with ENVIRON to simulate two episodes – one of them is the July 11 and 12, 1999 episode, and the other one is the July 30-August 2, 2000 episode. This diagram shows the model results from the July 12, 1999 episode, at 4 p.m. There is a higher O3 concentration area at the east side of the 680 corridor, towards south of Mt. Diablo, which has about 150 ppb of ozone, and at the same time there were about 146 ppb and 156 ppb of ozone observed in Livermore and in Concord, respectively. This indicates that the model is doing a very reasonable job, except that it is missing the high concentration at Concord.

CAMx LAYER 1, EFFECT OF 15% NOx REDUCTION ON O3 (Page No. 16 of Presentation):
For purposes of this presentation, staff reduced only the NOx in the emissions inventory and conducted another simulation. When the difference between the two simulations, in terms of ozone, were analyzed to see whether there was any ozone disbenefit, it showed that the ozone disbenefit was about 4 ppb. The difference between the previous chart and this one, shows ozone disbenefit to the west side, the maximum produced by the model. Therefore, it is not necessarily true that there is ozone disbenefit where there is maximum ozone concentration. Another point is that if one looks at the downwind areas within the Bay Area, there are ozone benefit areas; one of

them is in Alameda County and south of Livermore, and the other location is south of San Jose. There is a benefit of about 6 ppb of ozone by only reducing NOx.

Mr. Hayes inquired as to how there could be a balance between reductions of 4 ppb against a 4 ppb increase some place else. He stated that this issue has been a problem for some time and that he has worked on it with the Environmental Protection Agency (EPA) earlier, when they tried to link together exposure and health risk models that looked at people's actual exposure to what they might be and what the health consequences of that would be. It is helpful to those who live in the vicinity of the peak where one can see a reduction, and the ozone levels are higher there than elsewhere; but if an increase occurs on a lower base elsewhere, that also has health consequences, and the way to trade this off is to look at a net change in aggregate health risk. The tools are around to do this and he suggested that staff consider some simple ways to aggregate each of these grid cells; otherwise there is no resolution as to what the net choice might be. Mr. Hess commented that staff is working on this issue continuously and that it is important to run various scenarios by looking into the future. By only looking at the 2006 runs there will be a different epicenter; or instead of having high ozone levels in Concord using 2006 numbers and this episode, there might be no exceedances in that one area. There will be a change in the hydrocarbons/NOx ratios and even further changes in the future.

Dr. Bornstein commented that the health standard is based on an assumption that there are no health impacts if they are below the bright line; therefore, it is true that some people will breathe slightly more polluted air. As long as that does not push them over the bright line, in theory, there are no health impacts. He also commented that there would still be a violation under these conditions. Dr. Tanrikulu explained that since the District is in attainment for the 1-hour standard, EPA is allowing the maximum of three exceedances in three consecutive years. On July 11 and 12, 1999 there were exceedances in both the Sacramento and San Joaquin Valley areas. Since this is the first simulation of this episode, staff is still researching and studying this issue.

Mr. Hess pointed out that since CARB will be transitioning to the 8-hour standard, he assumed that they will be doing away with the 1-hour ozone standard. He feels that the focus should be on the 8-hour standard in the future because the EPA will be transitioning from the 1-hour federal ozone standard in June 2005. Therefore, the Committee should be thinking into the 8-hour, with very different control strategies. There are many different meteorological scenarios that cause ozone exceedances and there will be a transitioning from an exceedance-based standard (namely, the 1-hour federal) to a value-based standard for the 8-hour federal ozone standard.

6. Discussion of Possible Committee Input on Cumulative Risk Assessment.

Chairperson Bedsworth reminded the Committee that this item was discussed last at the full Advisory Council meeting, and wanted to know if members had any additional comments to make on this item.

Mr. Hayes stated that he had requested this item be placed on the agenda. The Cumulative Risk issue is a very important one and he is aware that the Public Health Committee has been looking at the issue for the last few months. In addition to this, there is the Toxics New Source Review project that is moving forward and ready for adoption in the next few months. Mr. Hayes commented that it seems that there are similar issues in today's presentations, that have to do with emission inventory of air toxics, and it would make sense that those technical issues be explored. Cumulative Risk is a way of putting into perspective the various policy choices that the District has, and which sources might be viewed most effectively and quickly with regard to public health.

In order to come to a good decision about that, Mr. Hayes felt that it is important to understand what people's cumulative risk might be and to what one might attribute it to. The risk that an average Bay Area resident faces comes more from the time they spend in traffic at the Bay Bridge – an exposure to diesel particulate from trucks idling while they sit there. It is important to know if the risks are because of some industrial facility that is down the street, particularly if it's the result of a cumulative effect from multiple sources that individually are so small that they might not be linked to them. Therefore, there are a lot of reasons as to why the Committee might want to look at Cumulative Risk.

In summary, he stated that there are many technical issues that deal with the emission inventory, and the measurement of air toxics in the air. It would be worthwhile to know what the trends might be, what the design and configuration of the monitoring network ought to be and to start looking at what tools might be useful in performing Cumulative Risk assessments. This project is new for the Technical Committee to research and study, although emission inventories and monitoring data are items that this Committee has routinely looked at for ozone and PM10. It is a logical extension to also look at air toxics. Tools available for Cumulative Risk have certain inherent capabilities and limitations, and a discussion of those would be beneficial. Mr. Hayes recommended that this item, especially the scientific and technical issues associated with Cumulative Risk, be brought before this Committee in the near future for further discussions.

Dr. Holtsclaw suggested that the Committee might also want to consider all of the individual risks that currently have standards and establish a total Cumulative Risk that the Committee would not want to exceed. Mr. Althuler commented that the entire subject of Cumulative Risk is a very extensive one; it includes the individual pollutants, combination of pollutants, additive effects of exposure, acute versus chronic exposure problems, etc., and he was of the opinion that since this topic is so important it is something that the Technical Committee cannot avoid being involved in the discussions and adding some value to it.

Chairperson Bedsworth asked the members if they would like to wait and discuss this topic further when there is some additional information, specific to the Bay Area, received from the pilot study that the District is embarking on in the next fiscal year; or whether they would like to proceed sooner. Dr. Bornstein requested the District for its input as to what its plans and goals are, and how they are going to proceed so that the Committee might provide some input that could help guide the District in its planning stages.

Messrs. Hess and Kendall stated that the District staff is scheduled to make a presentation to the full Advisory Council at its meeting on July 15 on the Cumulative Risk Reduction Program. The Technical Committee members could, at that time, become aware of the District's plans. Mr. Hess stated that the District welcomed comments and input from any of the Council members to help guide them in this matter.

Mr. Hayes stated that there is a lot that the Committee can begin to do, such as, understanding the levels of toxics in the air, and the monitoring trends. He would be happy to wait and find out the outcome of the discussions from the July 15 meeting, and it would be helpful if staff can provide some input in this area.

7. Committee Members' Comments:

Dr. Holtsclaw suggested that since the Committee has not yet completed its work with EMFAC, that Mathew Barth from U.C. Riverside be invited back for another presentation to the Committee.

His laboratory is conducting research by subjecting off-road cars to different speeds and cold starts, taking them through the different cycles and calculating the emissions from them. When he made his presentation to the Committee five or six years ago, he had not come to any final conclusions. It might be useful to know the results of his recent research findings. He would be able to provide some insight and input into EMFAC. This will give the Committee a better understanding of motor vehicle emissions in the future, the influence of both newer cars and trucks and different speed and travel/speed profiles.

Chairperson Bedsworth asked the members whether they would like to have the presentation from Mr. Barth before the Committee tries to pull together all of its thoughts for the District on the ozone planning process, or whether the members would like to study EMFAC in more depth as a separate issue. Dr. Holtsclaw felt that it could probably be done afterwards. Dr. Bornstein commented that it is an on-going process, and that the Committee can summarize its current understanding and then after it receives more information, it can provide another summary some months down the road. Dr. Bornstein felt that its an important topic and that if the Committee has not done a summary recently, then this is a good opportunity to point out the progress that has been made and highlight some of the areas that can be worked on further.

Mr. Altshuler proposed that perhaps staff should contact Mr. Barth to find out the status of his research and then make a recommendation to the Committee as to whether it is appropriate to invite him to make another presentation. Parallel to this, Rob Harley is a lot closer in proximity, and he may have a little bit more to offer. Since the Committee has to stay in touch and follow up with Dr. Harley on other issues, staff could contact him for this also. Dr. Bornstein suggested Mark Jacobsen also as a possible name and, perhaps conducting some sort of a mini workshop by bringing together people who are on the cutting edge of dealing with the topic of emissions. By doing this, the Committee could come to a resolution so that it can state in the submission to EPA that the Committee is aware of all the differences, has made its selections based on the best that is available, and have references to people who can back that up. Mr. Altshuler agreed with Dr. Bornstein's comments.

8. **Time and Place of Next Meeting.** 1:30 p.m., Wednesday, August 4, 2004, 939 Ellis Street, San Francisco, California.

9. **Adjournment.** 12 Noon.

Neel Advani
Deputy Clerk of the Boards